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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## TITANIUM IN THE FOURTH QUARTER 1997

According to the U.S. Geological Survey, titanium mill product shipments were 7,530 metric tons, a 3% increase compared with revised shipments of the previous quarter. Receipts of titanium scrap totaled 7,930 tons with 4,090 tons of home scrap and 3,840 tons of purchased scrap. Scrap receipts decreased 14% compared with revised receipts of 9,240 tons in the previous quarter. Ingot shipments were 6,260 tons, a 8% increase compared with revised shipments of 5,770 tons in previous quarter.

The Defense Logistics Agency, Defense National Stockpile Center, is soliciting offers for the sale of 3,630 tons (4,000 short tons) of titanium sponge held in the Government stockpile. The initial offering will be held, on a negotiated bid basis, on April 14, 1998. If all material is not sold, subsequent offerings will be held on a monthly basis. Offerors have been advised to contact Caitlin O'leary at (703)767-6753, fax (703)767-5484, e-mail [caitlin\\_oleary@hq.dla.mil](mailto:caitlin_oleary@hq.dla.mil) (Defense National Stockpile Center, 1998).

In September, the International Trade Administration (ITA) reaffirmed its preliminary review of antidumping duty on titanium sponge from Russia. The review covered imports from AVISMA Titanium-Magnesium Works and three trading companies, Interlink Metals & Chemicals, S.A., TMC Trading International, Ltd., and Cometals, Inc. during the period August 1, 1995 through July 31, 1996. The ITA concluded that AVISMA, a producer of titanium sponge would continue to be subject to the Russia-wide 83.96% antidumping margin while the margin for the trading companies, Interlink, Cometals, and

TMC, were determined to be 0%, 28.31%, and 0%, respectively (Department of Commerce, 1997).

In December, TMC requested a review of the antidumping determination that is applied to imports of titanium sponge from Russia. According to the company, the justification for this review is a change of circumstance. In response to this request, the International Trade Commission has requested comments from the public as to whether changed circumstances exist sufficient to warrant the institution of a review. The purpose of the proposed review is to determine whether revocation of all existing antidumping orders on imports of titanium sponge is likely to lead to continuation or recurrence of material injury to the domestic industry (International Trade Commission, 1997).

### Notice

Excluding prices, the data in this publication have been rounded to three significant figures.

### References Cited

- Defense National Stockpile Center, 1998, Defense National Stockpile Center (DNSC) commodities for sale, February 23 (Accessed on the World Wide Web on March 10, 1998 at URL <http://www.dnsc.dla.mil/commodit.htm>)
- Department of Commerce, International Trade Administration, 1997, titanium sponge from the Russian Federation; notice of final results of antidumping duty administrative review: Federal Register. v. 62, no. 179, September 16, p. 48601-48606.
- International Trade Commission, 1997, Titanium sponge from Japan, Kazakstan, Russia and Ukraine: Federal Register. v. 62, no. 250, December 31, p. 68300-68301.

TABLE 1  
COMPONENTS OF U.S. TITANIUM METAL SUPPLY AND DEMAND 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	Fourth quarter 2/	Year to date
Production:							
Sponge	W	W	W	W	W	W	W
Ingot	13,100	51,400	13,800	14,500	15,200	15,200	58,800
Mill products	7,860	30,700	8,330	8,040	9,190 r/	8,700	34,300
Exports:							
Sponge	243	528	198	218	466	53	935
Scrap	1,190	3,410	1,010	1,290	1,180	1,360	4,850
Ingot, slab, sheet bar, etc.	1,180	3,120	1,140	979	1,040	782	3,940
Other unwrought	133	471	88	52	98	98	335
Bars, rods, profiles, and wire	255	1,400	301	346	347	214	1,210
Other wrought	674	3,130	893	989	820	854	3,560
Total	3,670	12,100	3,630	3,880	3,950	3,370	14,800
Imports:							
Sponge	3,160	10,100	3,830	4,060	3,710	2,430	14,000
Waste and scrap	3,840	16,400	3,320	2,810	2,470	1,430	10,000
Ingot, billet	1,090	2,590	1,130	1,520	1,370	1,150	5,170
Other unwrought	152	595	116	73	91	90	370
Articles of titanium	38	261	65	37	85	76	263
Other wrought (mill products)	1,760	5,890	1,420	1,060	1,010	499	3,990
Total	10,000	35,800	9,870	9,570	8,730	5,670	33,800
Stocks, end of period:							
Sponge, Government 3/	33,200	XX	33,200	33,200	33,200	33,100	XX
Sponge, Industry	4,390	XX	5,250	5,670	5,470 r/	7,050	XX
Scrap	15,900	XX	16,400	15,300	15,400 r/	15,200	XX
Ingot	4,710	XX	4,310	4,330	5,000 r/	4,350	XX
Total industry	25,000	XX	25,900	25,300	25,900 r/	26,600	XX
Consumption:							
Sponge	6,850	28,400	6,890	8,300	8,700 r/	8,160	32,000
Scrap	7,320	26,300	6,620	6,770	6,370 r/	6,670	26,400
Ingot	9,920	38,300	10,500	11,400	11,700 r/	11,800	45,500
Mill products (net shipments):	6,840	25,900	6,780	6,570	7,300 r/	7,530	28,200
Forging and extrusion billet	3,200	11,200	3,040	3,000	3,140 r/	3,460	12,600
Rod and bar	793	3,100	736	795	1,000 r/	862	3,390
Other 4/	2,850	11,600	3,000	2,770	3,160	3,210	12,100
Castings (shipments)	144	680	138	197	397 r/	287	1,020

r/ Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Imports and exports for fourth quarter 1997 include October and November only. December 1997 data not available at time of publication. Production and consumption data are for full quarter.

3/ Includes 23,300 tons stockpile grade and 9,860 tons nonstockpile grade material, except for fourth quarter 1997 which included 23,200 tons stockpile grade and 9,860 tons non-stockpile grade material.

4/ Data for sheet and strip, plate, fastener stock and wire, extrusions (other than tubing), pipe and tubing, and other have been combined to avoid disclosing company proprietary data.

TABLE 2  
COMPONENTS OF U.S. TITANIUM DIOXIDE PIGMENT SUPPLY AND DEMAND 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	Fourth quarter	Year to date
Production	320,000	1,230,000	316,000	342,000	350,000 r/	334,000	1,340,000
Imports 2/	30,700	167,000 r/	50,000 r/	48,400	48,700	NA	NA
Exports 3/	97,400	332,000	103,000	104,000	96,600	NA	NA
Stocks, end of period	107,000	XX	97,300	94,000	99,800	107,000	XX
Apparent consumption 4/	245,000	1,060,000 r/	272,000	289,000	296,000	NA	NA

r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Based on Harmonized Tariff Schedule of the United States (2823.00.0000, 3206.10.0050, and 3206.10.0010).

3/ Based on Harmonized Tariff Schedule of the United States (2823.00.0000 and 3206.10.0000).

4/ Apparent consumption = production + imports - exports - stock increase or + stock decrease.

Source: Bureau of the Census.

TABLE 3  
U.S. EXPORTS OF TITANIUM PRODUCTS 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	October-November	Year to date
Metal:							
Unwrought:							
Sponge	243	528	198	218	466	53	935
Scrap	1,190	3,410	1,010	1,290	1,180	1,360	4,850
Billet	186	489	135	219	232	48	634
Blooms and sheet bars	911	3,060	877	609	635	615	2,740
Ingot	78	269	132	151	172	119	574
Other unwrought	133	471	88	52	98	98	335
Wrought:							
Bars, rods, profiles, and wire	255	1,400	301	346	347	214	1,210
Other	674	3,130	893	989	820	854	3,560
Ores and concentrates	722	15,500	7,510	1,810	7,280	5,940	22,500
Oxides	13,200	40,600	9,550	9,760	10,900	8,470	38,700
Pigments	84,200	292,000	93,700	94,500	85,700	62,100	336,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM METAL 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	October-November	Year to date
Unwrought:							
Sponge:							
China	304	833	214	154	45	--	413
Japan	1,470	4,400	1,770	1,630	1,570	1,040	6,010
Kazakhstan	485	920	465	135	386	72	1,060
Russia	896	3,570	1,230	1,780	1,710	1,320	6,030
Other	4	379	147	366	--	--	512
Total	3,160	10,100	3,830	4,060	3,710	2,430	14,000
Waste and scrap:							
Canada	111	409	63	42	92	65	262
France	187	848	305	244	294	175	1,020
Germany	33	559	52	198	95	133	478
Italy	407	1,380	278	413	334	170	1,200
Japan	720	2,620	478	568	467	352	1,870
Russia	987	5,490	890	531	252	104	1,780
United Kingdom	1,110	3,770	888	601	713	268	2,470
Other	285	1,300	362	216	219	154	951
Total	3,840	16,400	3,320	2,810	2,470	1,420	10,000
Ingot and billet:							
China	69	161	144	123	89	--	356
Russia	725	1,550	768	1,060	934	981	3,740
United Kingdom	270	635	202	306	325	169	1,000
Other	24 r/	248 r/	15 r/	33 r/	21	1	70
Total	1,090	2,590	1,130	1,520	1,370	1,150	5,170
Powder	77	240	60	51	52	58	221
Other 3/	75	355	56	22	39	32	148

See footnotes at end of table.

TABLE 4--Continued  
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM METAL 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	October-November	Year to date
Wrought:							
Articles of titanium:							
Castings	1	4	1	1	1	1	3
Other	37	257	64	36	84	75	260
Other wrought (mill products):							
Bars, rods, profiles, and wire	682	1,710	666	318	128	131	1,240
Plates, sheets, strips, and foil	915	3,490	447	309	707	302	1,770
Tubes and pipes	51	311	7	14	57	23	100
Other	114	374	297	423	122	43	885
Total mill products	1,760	5,890	1,420	1,060	1,010	499	3,990

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

3/ Includes blooms, sheet bars, slabs, and other.

Source: Bureau of the Census.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM CONCENTRATES 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	November-December	Year to date
Ilmenite:							
Australia	143,000	359,000	105,000	79,500	105,000	80,100	369,000
India	--	114,000	26,200	30,000	--	--	56,300
Sri Lanka	--	29,400	--	--	--	--	--
Ukraine	--	15,800	--	--	27,100	--	27,100
Total	143,000	518,000	131,000	110,000	132,000	80,100	453,000
Titanium slag:							
Canada	--	11,500	30,400	--	--	5,250	35,700
South Africa	145,000	410,000	45,700	72,000	151,000	86,200	355,000
Other 2/	--	2	--	--	11	30	41
Total	145,000	421,000	76,100	72,000	151,000	91,500	390,000
Rutile:							
Australia	14,700	46,000	4,580	7,480	22,700	13,300	48,100
South Africa	23,400	135,000	31,900	32,700	30,300	19,400	114,000
Other 2/	3	1,180	--	24	39	6	70
Total	38,200	182,000	36,500	40,200	53,100	32,700	162,000
Synthetic rutile:							
Australia	13,300	108,000	31,400	35,000	43,000	31,500	141,000
Malaysia	--	6,850	456	2,660	2,660	1,140	6,920
Other	--	27,200	--	--	166	--	166
Total	13,300	142,000	31,800	37,700	45,900	32,700	148,000
Titaniferous iron ore:							
Canada	38,800	90,200	69	12,300	19,000	12,400	43,800

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF TITANIUM PIGMENTS 1/

(Metric tons)

	1996		1997				
	Fourth quarter	Year to date	First quarter	Second quarter	Third quarter	October-November	Year to date
80% or more titanium dioxide:							
Australia	--	--	--	--	1,720	1,470	3,190
Belgium	241	1,020	287	445	221	264	1,220
Canada	17,600	64,900	18,800	18,500	19,400	12,000	68,700
China	131	771	154	624	507	407	1,690
Finland	155	966	156	128	176	196	656
France	650	2,830	744	711	714	442	2,610
Germany	3,060	14,500	6,290	5,840	6,400	5,060	23,600
Japan	866	4,210	1,360	2,140	2,100	1,090	6,700
Norway	928	5,410	1,890	1,570	1,120	1,140	5,710
Poland	100	940	388	260	260	180	1,090
Singapore	939	4,030	1,140	398	680	828	3,050
Slovenia	306	1,450	241	800	853	204	2,100
United Kingdom	19	202	58	119	3	--	180
Other	867 r/	2,930 r/	561 r/	748 r/	133 r/	328	1,770
Total	25,900	104,000	32,100	32,300	34,300	23,600	122,000
Other titanium dioxide:							
Canada	201	989	246	655	313	559	1,770
China	327	1,300	34	72	107	--	213
France	2,950	9,780	2,370	1,050	2,040	761	6,220
Germany	225	1,330	260	341	221	192	1,010
Italy	433	1,860	309	718	248	298	1,570
South Africa	1,270	5,790	1,900	2,690	2,030	383	7,010
Spain	4,660	13,900	4,670	2,740	3,970	1,720	13,100
United Kingdom	671	3,540	1,130	990	626	204	2,950
Other	134 r/	944 r/	444 r/	1,380 r/	278 r/	149	2,250
Total	10,900	30,400	11,400	10,600	9,830	4,270	36,100
Titanium oxide:							
Belgium	389	2,290	621	760	388	191	1,960
Canada	109	2,930	--	--	14	70	84
China	255	1,370	245	497	307	349	1,400
Czech Republic	186	929	243	364	453	310	1,370
France	936	5,230	3,290	2,320	2,360	1,670	9,640
Germany	2,570	8,230	1,280	590	362	221	2,450
Japan	198	1,180	211	136	97	71	515
United Kingdom	541	742	141	400	262	101	904
Other	334 r/	607 r/	510 r/	353 r/	364 r/	273	1,500
Total	5,520	23,500	6,540	5,420	4,600	3,260	19,800
Grand total	30,700	167,000	50,000	48,400	48,700	31,200	178,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 7  
PUBLISHED PRICES OF TITANIUM MATERIALS

(End of period, fourth quarter 1997)

Specification of material	Range
Ilmenite, per metric ton:	
F.o.b. Australian ports	\$73 -- \$86
Titanium slag, per metric ton: 1/	
80% TiO <sub>2</sub> , Canada	309
85% TiO <sub>2</sub> , South Africa	256
Rutile, per metric ton:	
Natural:	
Bagged, f.o.b. Australian ports	640 -- 700
Bulk, f.o.b. Australian ports	490 -- 540
Sponge metal, per pound:	
Estimated, domestic	4.25 -- 4.50
Titanium scrap, per pound:	
Turnings, unprocessed (Ti-6Al-4V)	.70 -- .73
Ferrotitanium, per pound:	
70% (max. 4.5% Al) per pound Ti	1.98 -- 2.08
Titanium dioxide pigment, per pound:	
Anatase, f.o.b. U.S. plants, list price	1.01 -- 1.03
Rutile, f.o.b. U.S. plants, list price	1.04 -- 1.06

1/ Estimated based on U.S. imports for consumption.

Sources: American Metal Market, Chemical Market Reporter, Industrial Minerals (London), Platt's Metals Week, and industry contacts.